National Wetlands Inventory Map Report
State of Nevada

Project ID: R01Y05P08

Project Title or Area: State of Nevada

Source Imagery (type, scale and date): Nominal wetland scale is 1:250,000.

The original wetland mapping in Nevada used primarily 1:58,000 scale color infrared aerial photography taken from 1980 through 1986. This mapping was done on hardcopy image overlays.

Due to logistical constraints at the time of the mapping, standard NWI large scale wetland maps covering about 50 square miles (1:24,000 scale maps) were not prepared for the entire State. Rather, a statewide series of 1:250,000 scale reconnaissance level wetland maps (each covering about 6,000 square miles), was prepared. These reconnaissance level wetland maps provide information about general location, type, and extent of wetlands in Nevada. The limitations of the reconnaissance level maps does not allow for the level of detail provided on the aerial photography. Thus, the several hundred NWI wetland mapping codes, describing various wetland types on the aerial photography, have been simplified based on size.

Inventory Method (original mapping, map update, techniques used):

This project was original mapping of Nevada's wetlands and all delineations followed standard NWI photointerpretation procedures.

All wetlands 3 acres and larger composed the target population. The actual results indicated that wetlands less than the minimum size were included in the inventory. However, not all wetlands less than the target size category were detected. Certain habitats were excluded from this study because of the limitations of aerial imagery as the primary data source to detect wetlands. Examples of wetlands that may not have been inventoried include small sinks or seeps less than 1-2 acres (0.5-1.0 ha), ephemeral wetlands, which are not recognized as wetlands on the aerial photography, and certain types of "farmed wetlands".

Wetlands and deepwater habitats were identified, delineated, and classified on overlays to the aerial photographs based on visible features reflecting conditions at the time the photography was taken. Visual evidence of hydrologic conditions such as saturation, flooding, or ponding combined with collateral data sources such as soil surveys, and topographic maps were used to identify and delineate the areal extent of wetlands. Field and office quality control procedures ensured that the maps were as accurate as possible. However, aerial photointerpretation has an inherent margin of error based on scale, emulsion, season, and year of photography. In addition, wetlands are dynamic features on the landscape that change in size, vegetative composition and amount of surface water depending on seasonal and annual conditions. NWI maps are a "snapshot in time" intended to depict the distribution of wetlands and deepwater habitats under typical conditions. For detailed information about NWI wetland classification and mapping see Peters (1994), USFSW (1995), and Tiner (1997).

Data Limitations:

These data are considered reconnaissance level wetland maps developed to be used at a scale of 1:250,000. Reconnaissance level wetland data provide information about general location, type, and extent of wetlands in Nevada. The limitations of the reconnaissance level data does not allow for the level of detail provided on the aerial photography.

General description of the Project Area:

Nevada is the seventh largest state in size, covering an area of 110,540 square miles (485 miles long and 315 miles wide), (Nevada State Library & Archives). Nevada topography ranges from high mountains to valleys and river washes at the lower elevations. Broken chains of mountains run generally north and south and are separated by flat-bottomed alluvial valleys. There are over 300 mountain ranges in Nevada. This basin and range topography significantly influences the location of many wetlands. There are 51 peaks of 9,000 feet or greater in Nevada, the highest is Boundary Peak (13,140 feet) in Esmeralda County.

The major rivers arc the Humboldt, Carson, Truckee, Walker and Colorado Rivers. The principal natural lakes are Lake Tahoe, Pyramid Lake, Walker Lake, and Ruby Lake. Major manmade reservoirs include Lake Mead, Lake Mojave, Topaz Lake, Lake Lahontan, and Rye Patch Reservoir.

The State has an arid climate with an average annual precipitation of nine inches. This, in combination with its mountainous terrain, makes Nevada one of the drier States in the Nation.

Description of wetland habitats:

Wetlands in Nevada exhibit considerable diversity. They are represented by both vegetated and non-vegetated wetlands and are dynamic resources occurring across a wide range of landscapes and of seasonal water and/or soil saturation. The amount of water increases and decreases depending on precipitation, runoff, evaporation, land use and many other factors. For example, Stillwater Marsh within the Carson Sink fluctuated between 8,500 acres in 1982 to over 220,000 acres when flooded in 1984 (Baldrica 1998).

Vegetated wetlands (those with 30 percent or greater vegetation cover) in Nevada can be divided into three major types: *emergent wetlands* (meadows, marshes, and seeps) characterized by grasses, sedges, and forbs; *scrub/shrub wetlands* (often adjacent to playas and springs) dominated by woody vegetation less than 20 feet (6 m) tall and *forested wetlands* ("riparian" wetlands) dominated by woody vegetation taller than 20 feet (6 m).

Nevada wetlands are not restricted to the general categories above. For example, scrub/shrub wetlands can occur as "riparian" wetlands just as forested wetlands can be associated with springs and seeps. Some of the more common wetland types and characteristic flora are listed below.

Emergent Wetlands

Emergent wetland meadows are dominated by herbaceous vegetation and are scattered throughout Nevada. They may be temporarily flooded early in the growing season or seasonally flooded for longer periods. The meadow plant community is characterized by wet tolerant species, often shallow rooted, which vary depending on duration of wetness and elevation. Some common vegetation found in the drier meadows include bent grass (*Agrostis spp.*), salt grass (*Distichlis spicata*), basin wild-rye (*Elymus cinereus*), timothy (*Phleum spp*.), alkali sacaton (*Sporobolus airoides*), dock (*Rumex spp*.), and false solomon's seal (*Smilacina spp*.). The wetter meadows include foxtail (*Alopecurus spp*.), sloughgrass (*Beckmannia syzigachne*), salt grass, rabbit-foot grass (Polypogon monspeliensis), alkali cordgrass (Spartina gracilis), sedges (*Carex spp*.), rushes (*Juncus spp*.), false-hellebore (*Veratrum californicum*), common monkey flower (*Mimulus spp*.) and smartweed (*Polygonum spp*.). Many meadows have been or are being used for pastures and hay production.

Emergent marshes are generally flooded for most, if not all, of the growing season and include shallow and deep marshes. Characteristic plants include cattail (*Typha latifola*), saltmarsh bullrush (*Bolboschoenus maritimus*), three-square bulrush (*Schoenoplectus pungens*), Nebraska sedge (*Carex nebrasscensis*), other sedges, manna grass (*Glyceria spp*.), and spikerush (*Eleocharis spp*.). Emergent marshes are found along the shores of constructed ponds and other permanent water bodies and are common at the various refuges and waterfowl management areas in Nevada.

Seeps and springs arc characterized by saturated soils with surface water present for short periods and may include such emergent plant species as water parsnip (*Berula erecta*), seep spring arnica (*Arnica longifolia*), bog St. John's wort (*Hypericum anagalloides*), speedwell (*Veronica spp*.), and northern bog violet (*Viola nephophylla*).

Scrub/Shrub Wetlands

Scrub/shrub wetlands include habitats with woody vegetation less than 20 feet tall ranging from areas that have saturated soils or seasonal surface water each year to areas that have surface water every few years. Vegetation includes true shrubs, young trees, or stunted trees and shrubs. Common vegetation in the wetter scrub/shrub wetlands include willows (*Salix spp*), speckled alder (*Alnus incana*), balsam poplar (*Populus balsamifera*), spring birch (*Betula occidentalis*), glandular labrador tea (*Ledum grandulosum*), and red-osier dogwood (*Cornus stolonifera*). Toward the drier range some common species are false-willow (*Baccharis spp*.), saltcedar (*Tamarix ramosissima*), Woods rose (*Rosa woodsii*), greasewood (*Sarcobatus vermiculatus*), silver sage (*Artemisia cana*), choke cherry (*Prunus virginiana*), saltbush (*Atriplex tridentata*), and current (*Ribes spp*.).

Forested Wetlands

Forested wetlands often occur as "riparian" wetlands adjacent to rivers, streams, seeps, and other wetlands. As with other Nevada wetlands, forested wetlands exhibit a wide range or water regimes. Typical forested wetland species include cottonwood (*Populus spp*.), blue elder berry (*Sambucus cerulea*), Englemann's spruce (*Picea engelmannii*), willow, box-elder (*Acer negundo*), and spring birch.

Playas
Playa wetlands are non-vegetated, nearly level, saline-alkaline affected and undrained shallow basins. They are also known as intermittent lakes or alkali flats. Playas contain water for short periods in winter and spring or following summer thunderstorms. Playas may have a fringe of scrub/shrub or emergent vegetation. Depending on the depth of the silica cementation, some playas may not be wet.

Ponds
Created ponds of various sizes and depths are found throughout the State. Depending on water depth, substrate and shoreline characteristics these areas may be non-vegetated, covered with aquatic vegetation, or lined with emergent and/or woody vegetation.

Lakes and Rivers
The deepwater lakes in Nevada include both natural lakes and manmade reservoirs. Lakes have both wetlands area - the shallow, shoreline (littoral zone) and the deepwater habitat - the deep, open water (limnetic zone). Rivers range from perennial rivers and streams to intermittent streambeds. As with the lakes, certain rivers include both wetlands and deepwater habitats within the riverine corridor.

References:

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